



You can't fix what you can't see.

Painting the Picture of Operational Excellence

Kurt Kinder

Alaska Airlines Vice President of Maintenance & Engineering

September 7, 2017





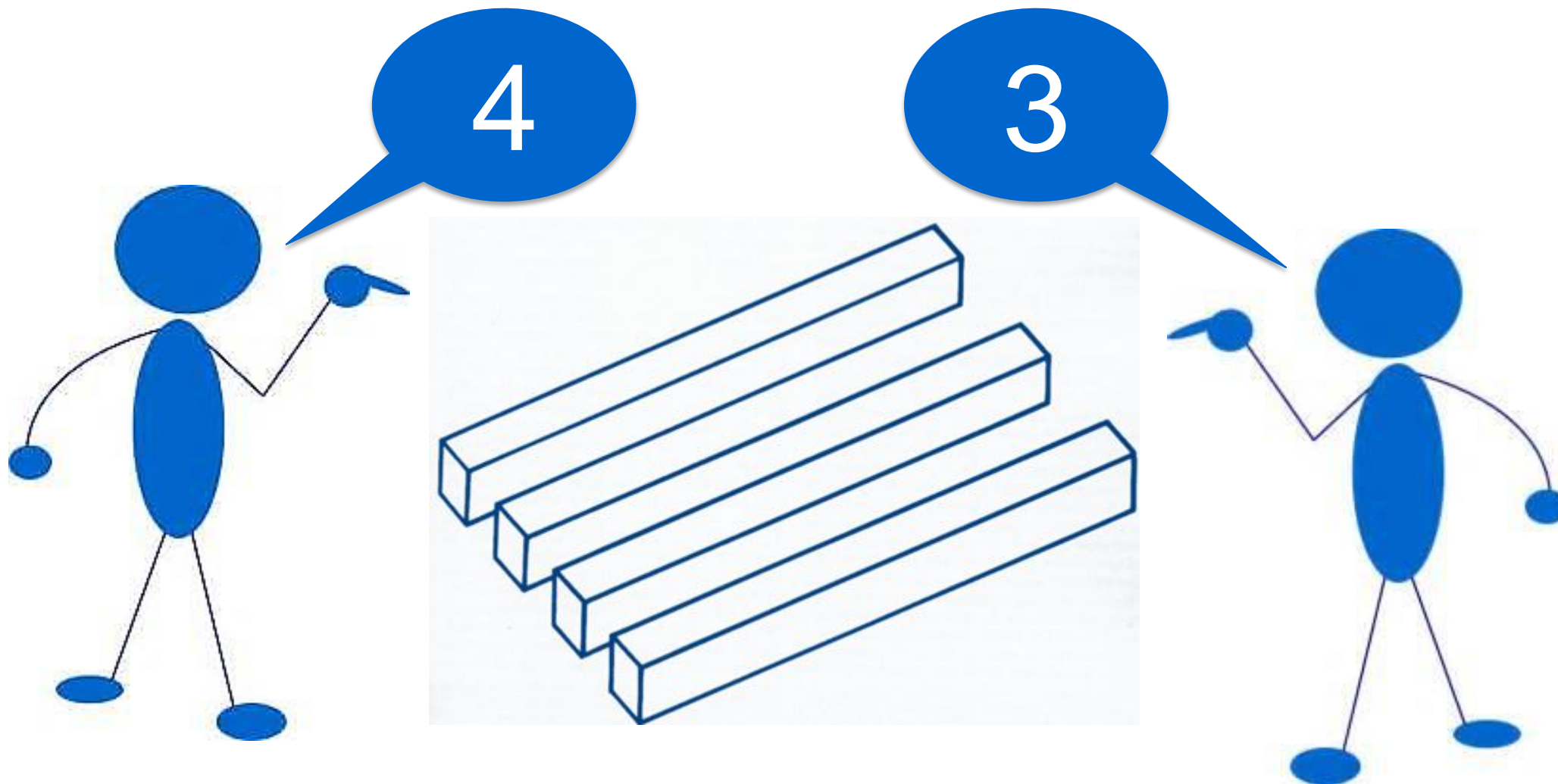
THE FACE ON THE TAIL

Our Trophy Case



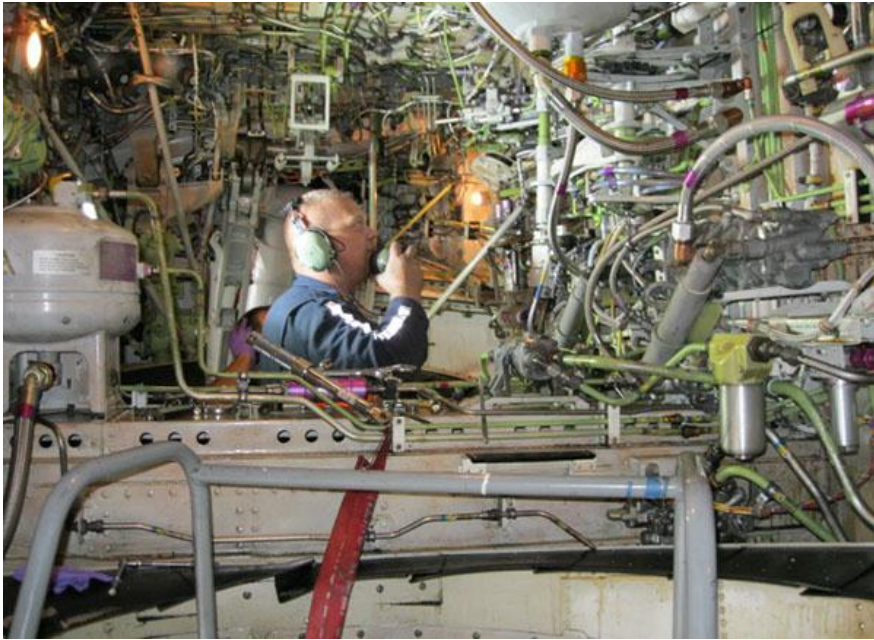
WALL STREET
JOURNAL







Flight 261 Memorial Sundial



Aircraft Maintenance 101

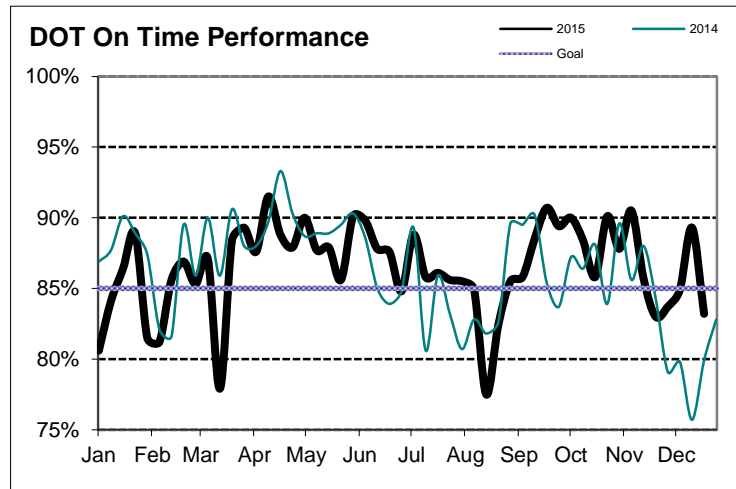
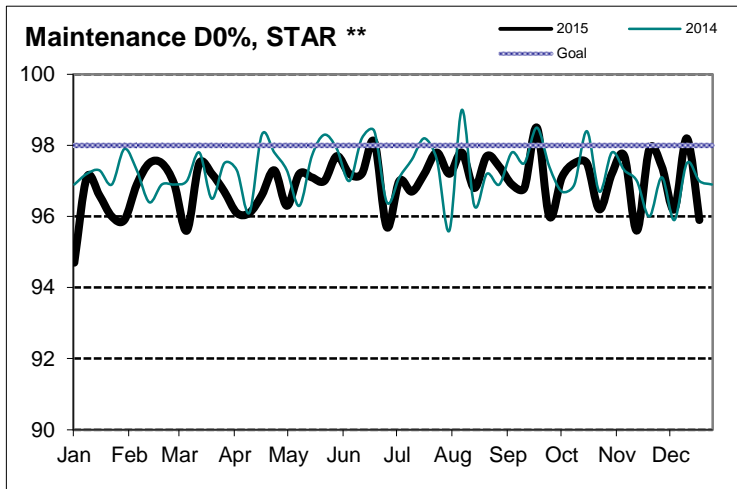
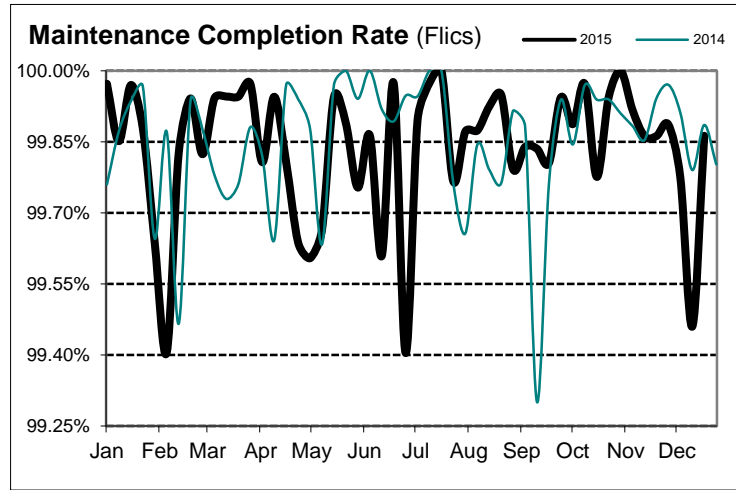
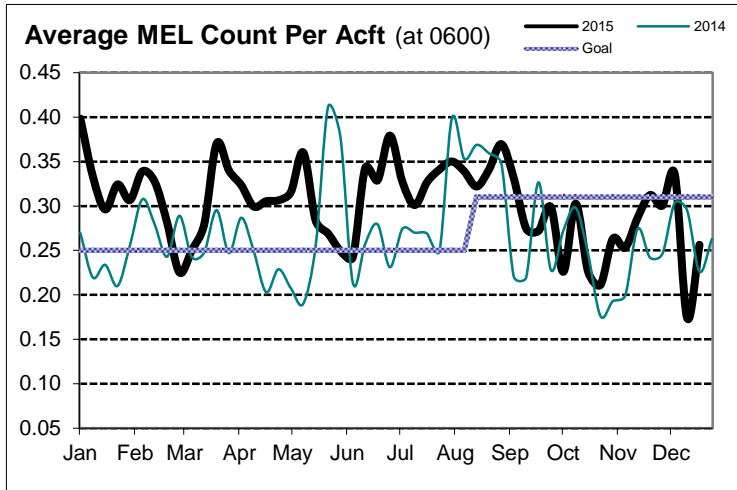
Partnering with Goldratt Consulting

Preparing for business needs of a growing fleet: 40-50% by 2021

Initial Objectives/Assumptions:

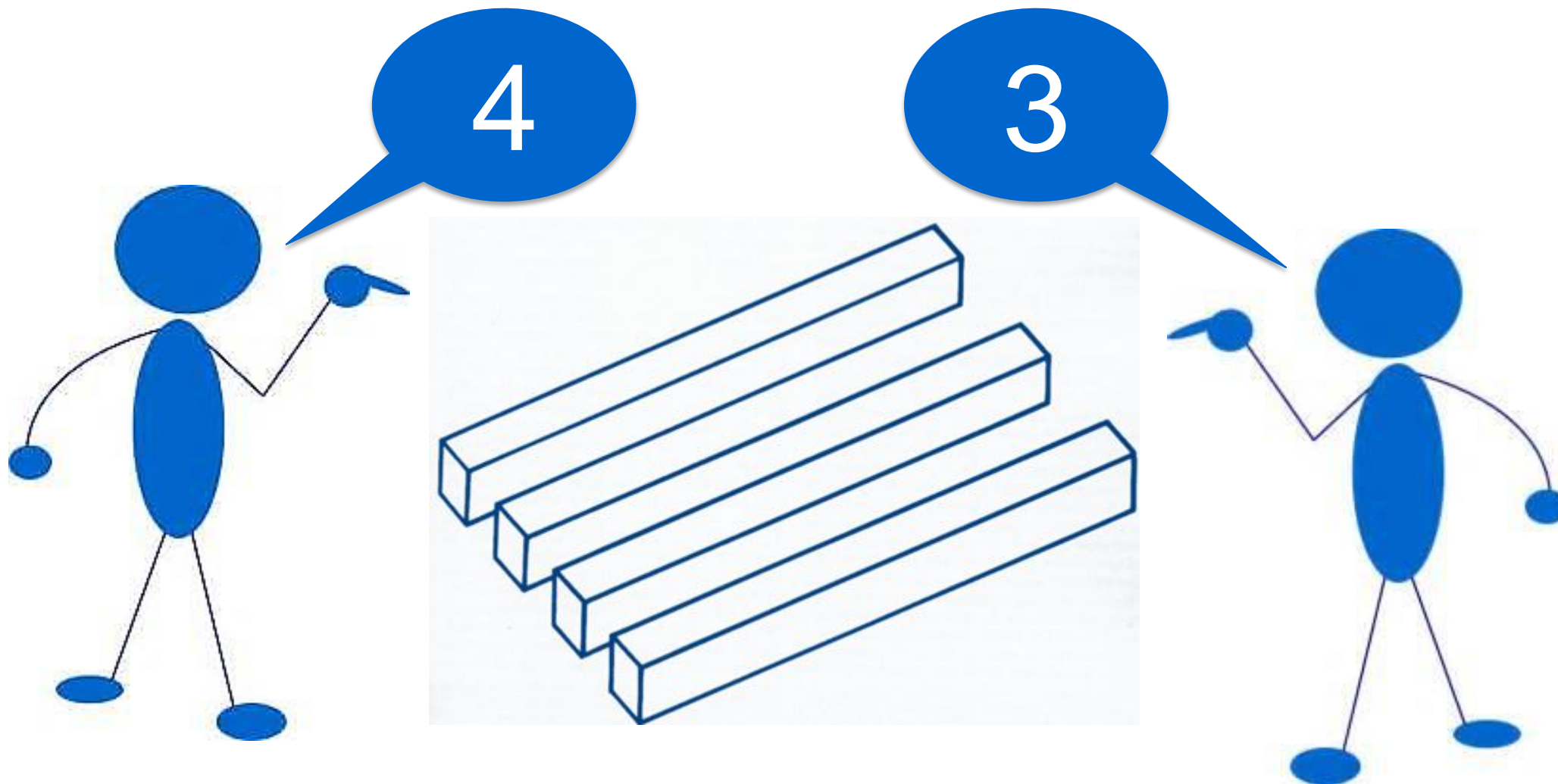
- Robust data-driven processes needed
- Limited data/metrics for managers to act on
- Unidentified system-wide bottlenecks
- Underutilized station capabilities



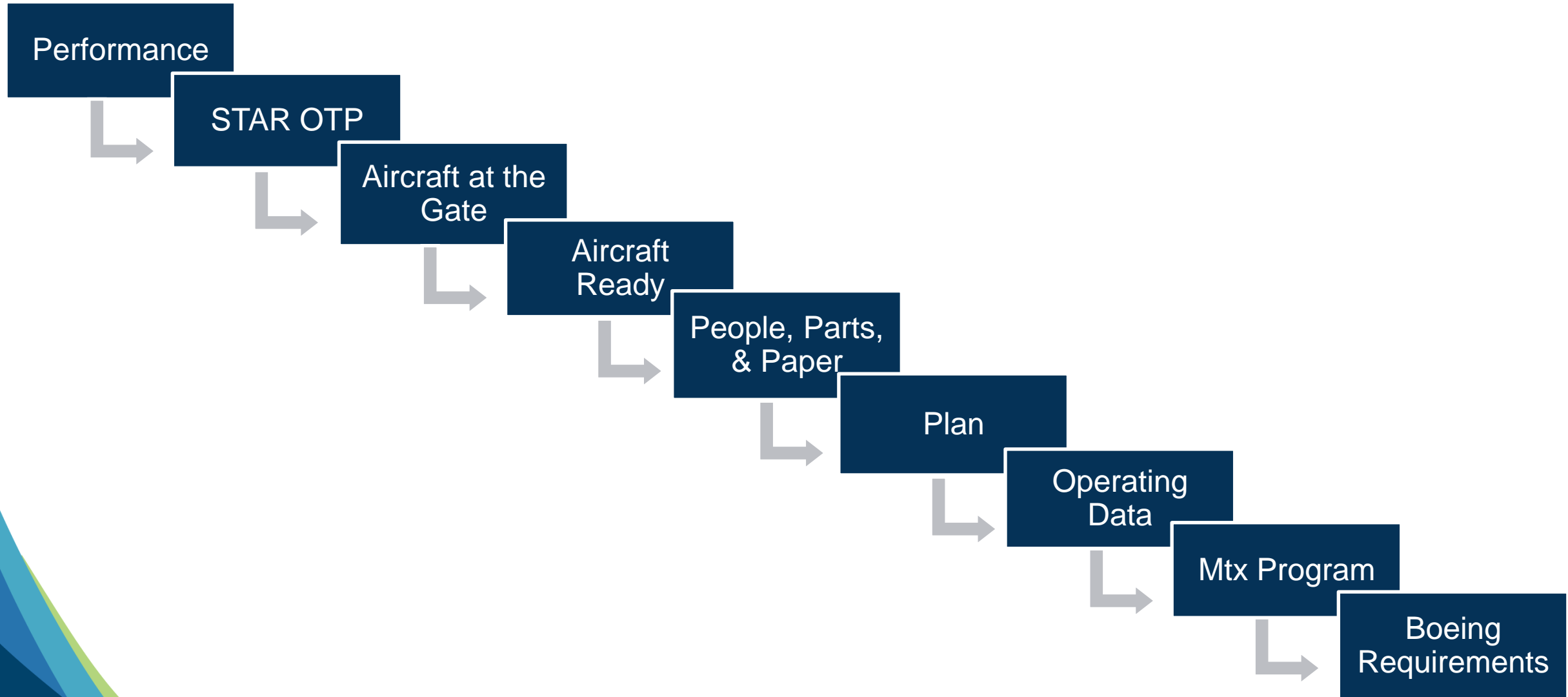


Picture of
Performance
2014/2015

Line
Maintenance



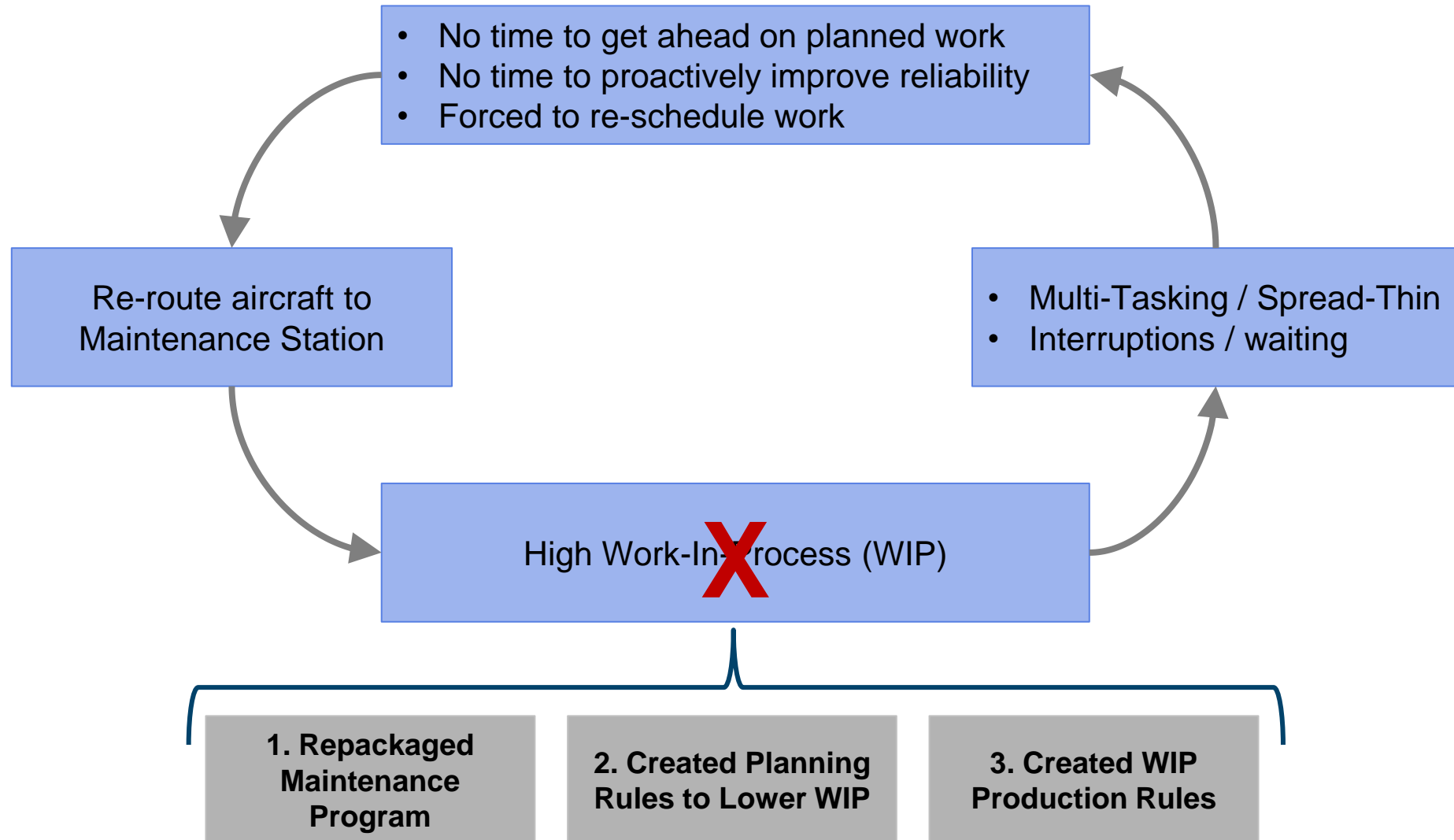
What is driving our performance?



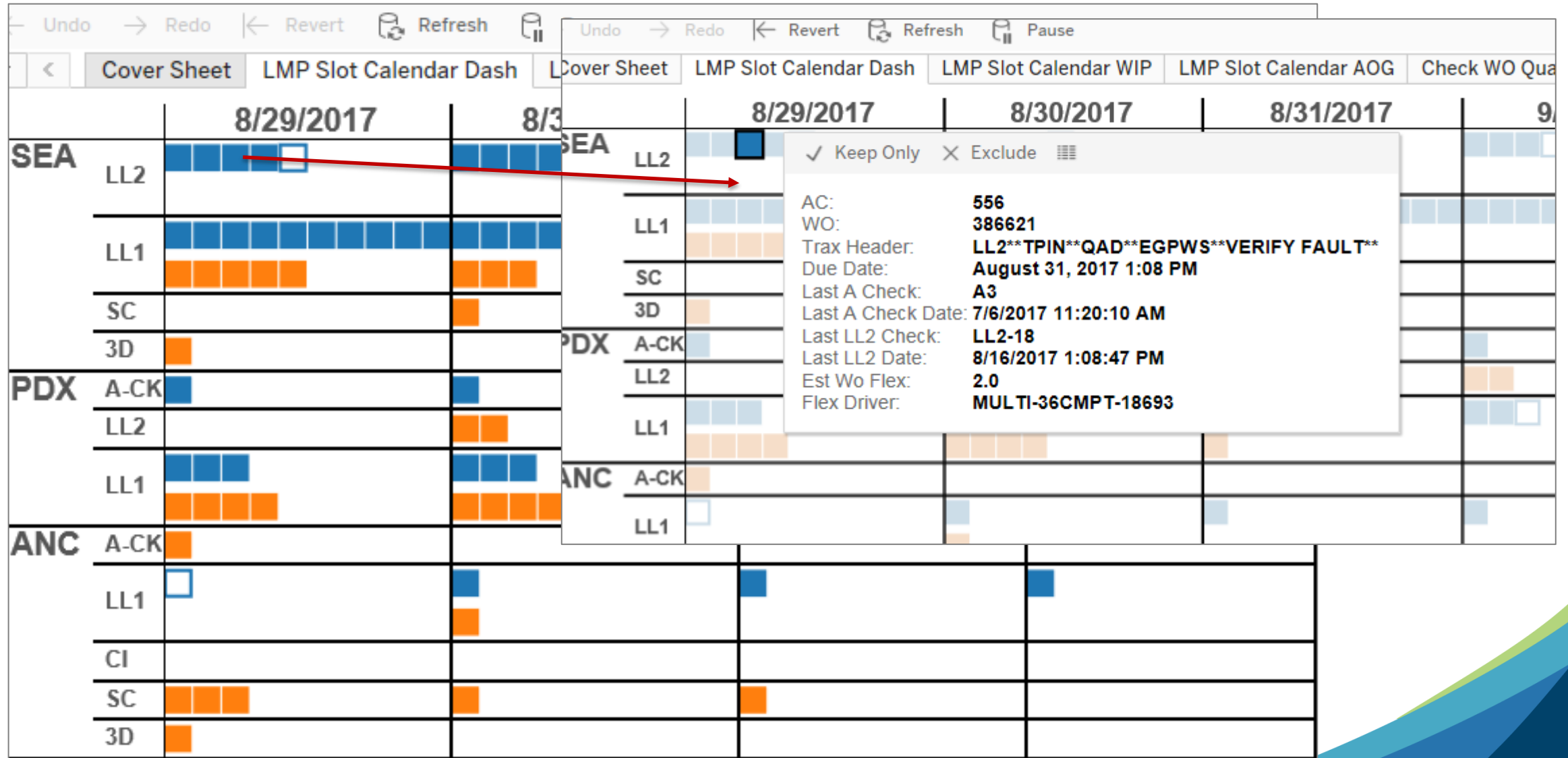
Adding Color to Our Performance Data



Cause and Effect Cycle



Creating Tools to Paint the Picture



Paint the Micro Picture: Overnight Dashboard

M+E Overnight Production Metrics - Daily

Last Updated*: 6/1/2015 7:05:55 AM

System WIP

| LL1 | LL2 | A-CK | CI | EMV | SC | 3D | DC | DEF only | OIL only | ETF | TU AC |
|-----|-----|------|----|-----|----|----|----|----------|----------|-----|-------|
| 19 | 6 | 2 | 1 | 1 | 4 | 2 | 8 | 6 | 2 | 30 | 81 |

OTS @ 0600* (unscheduled)

| | | | |
|-----|------------------------------------|-----|---|
| 306 | TAT LOOSE- CHANGED AND STILL LOOSE | SEA | 5 |
| 315 | FUEL IMBALANCE | FAI | |
| 705 | PYLON REPAIR | OKC | |
| 709 | #1 CSD CHANGE-GARLOC SEAL PTS F 81 | ANC | |
| 769 | SCRIBELINE INSP | SEA | |

Goal <= 2

Throughput* (excludes OIL only and ETF)

| | | |
|------------|----|-------|
| AC Count | 49 | |
| 0100 | 5 | 10.2% |
| 0400 | 18 | 46.9% |
| 0600 | 21 | 89.8% |
| Incomplete | 5 | |

Goal >= 25%

Goal >= 80%

Goal >= 95%

ECs Planned

| | | |
|-----------------|------|------------|
| Scheduled ECS | 313 | |
| Rescheduled ECs | 18 | |
| % Rescheduled | 5.8% | Goal <= 2% |

MEL / CDL*

| | | | |
|------------------|-------------|----------------|----|
| Generated- 24hrs | 20 | Open @ 2100 | 44 |
| Scheduled- RON | 23 | Generated- RON | 2 |
| Opportunity | 24 54.55% | Cleared- RON | 20 |
| MEL no WO (ETF) | 1 (0) 2.27% | Open @ 0600 | 26 |
| Captured | 23 52.27% | CDL | 5 |
| Clearance Rate | 87.0% | | |

Other Deferrals* (INT, PLT, TSR, CAT)

| | | | |
|----------------|-------|----------------|-------|
| Cleared- RON | 11 | Open Yesterday | 1,446 |
| Scheduled- RON | 15 | Cleared- 24hrs | 15 |
| Capture Rate | 1.0% | Open Today | 1,431 |
| Clearance Rate | 73.3% | | |

Flexibility / Quality

| | | | |
|---------------|-------|--------|------------------|
| | Today | Last 7 | |
| NG Fleet Flex | 7.4 | 7.0 | Goal >= 7.5 days |
| LL2 Quality | 14.2 | 12.2 | Goal >= 12 days |
| LL1 Quality | 3.5 | 3.3 | Goal >= 3 days |

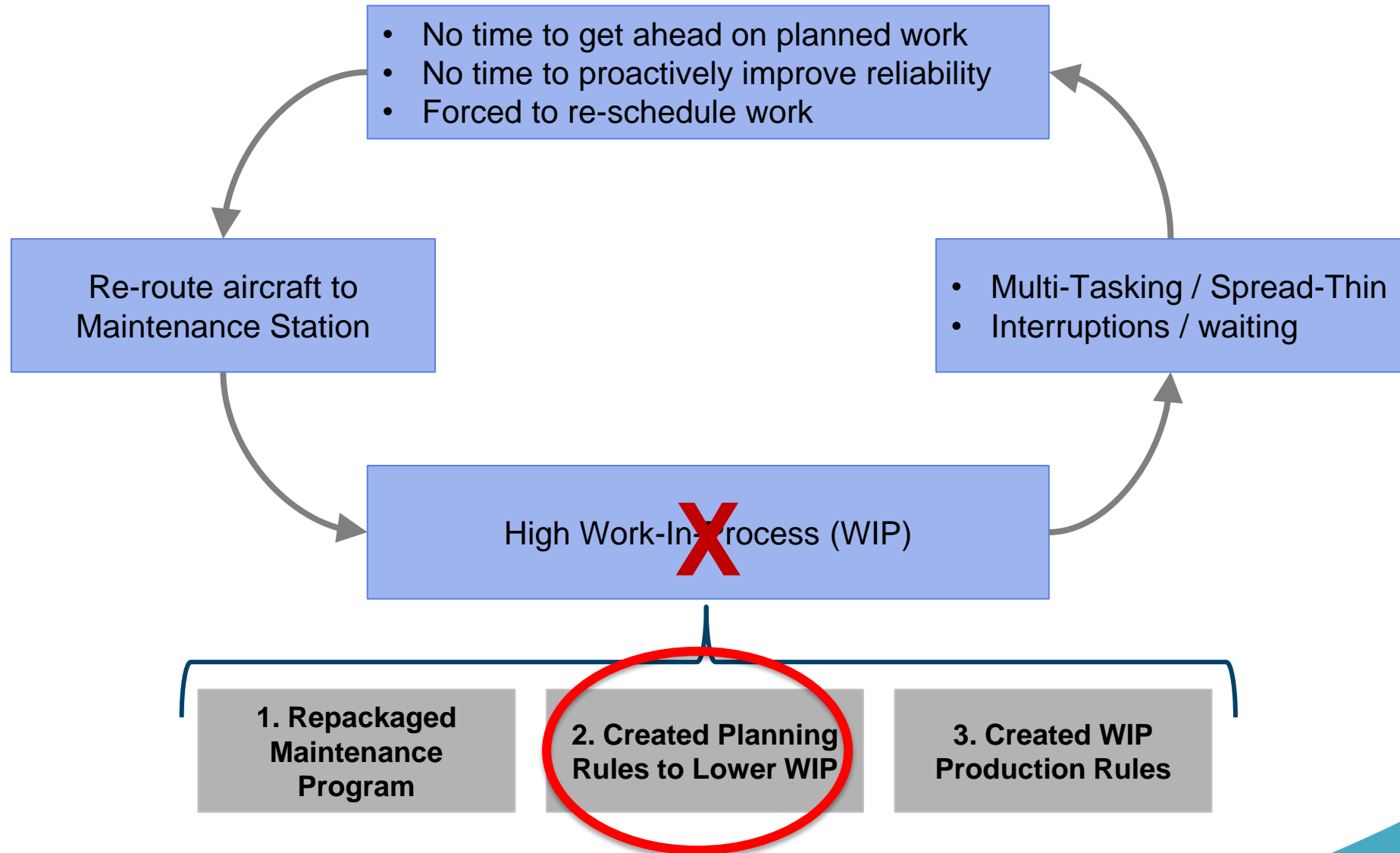
AOG / Expiring Tasks (Tonight)

| | | | |
|-----|-----|---------|----|
| LL1 | LL2 | A CHECK | CI |
| 12 | 0 | 0 | 1 |

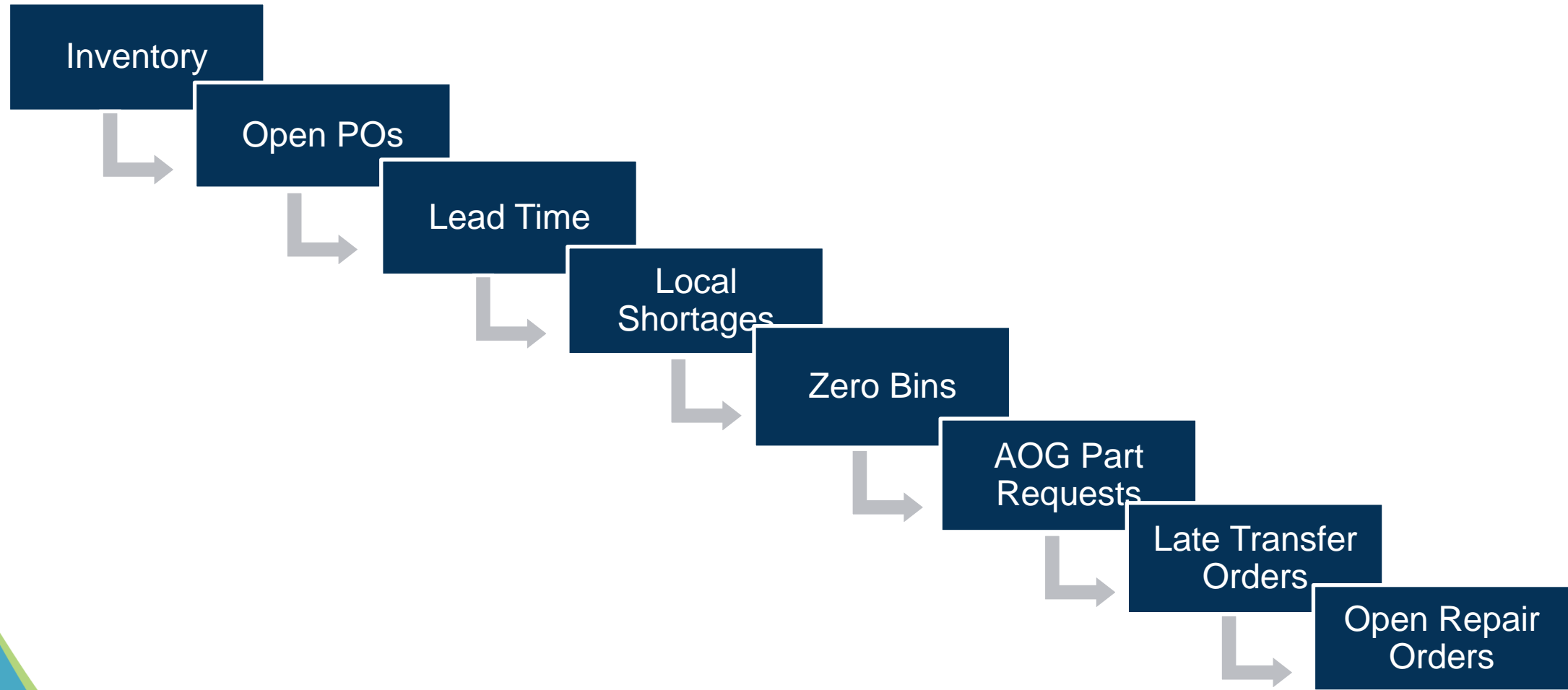
*SEA time

Alaska Airlines Privileged and Confidential

Lowering WIP Wasn't Enough



What drives part availability?



Reduce Shortages AND Reduce Inventory

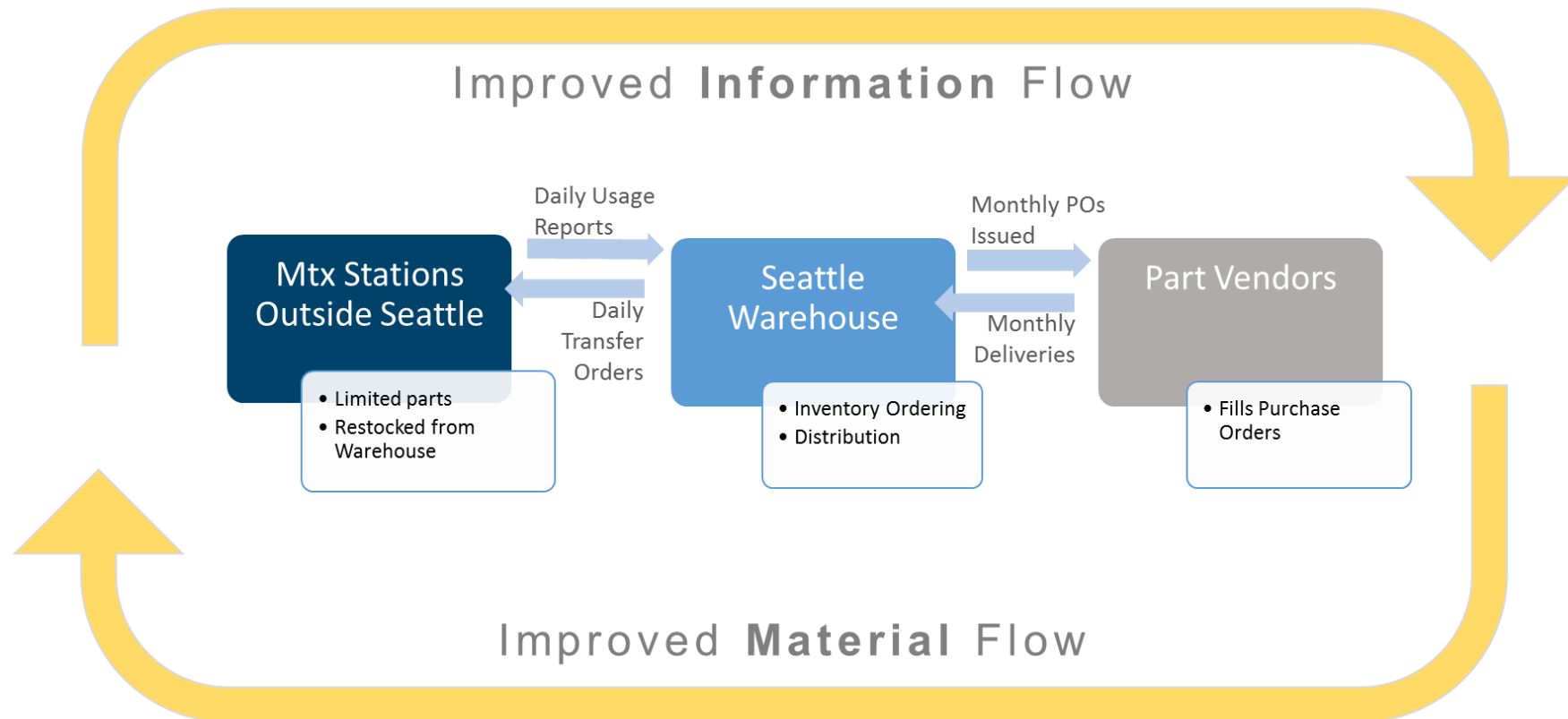
Traditional Approach: 1. Improve Forecast Accuracy

2. PUSH Inventory to Stations

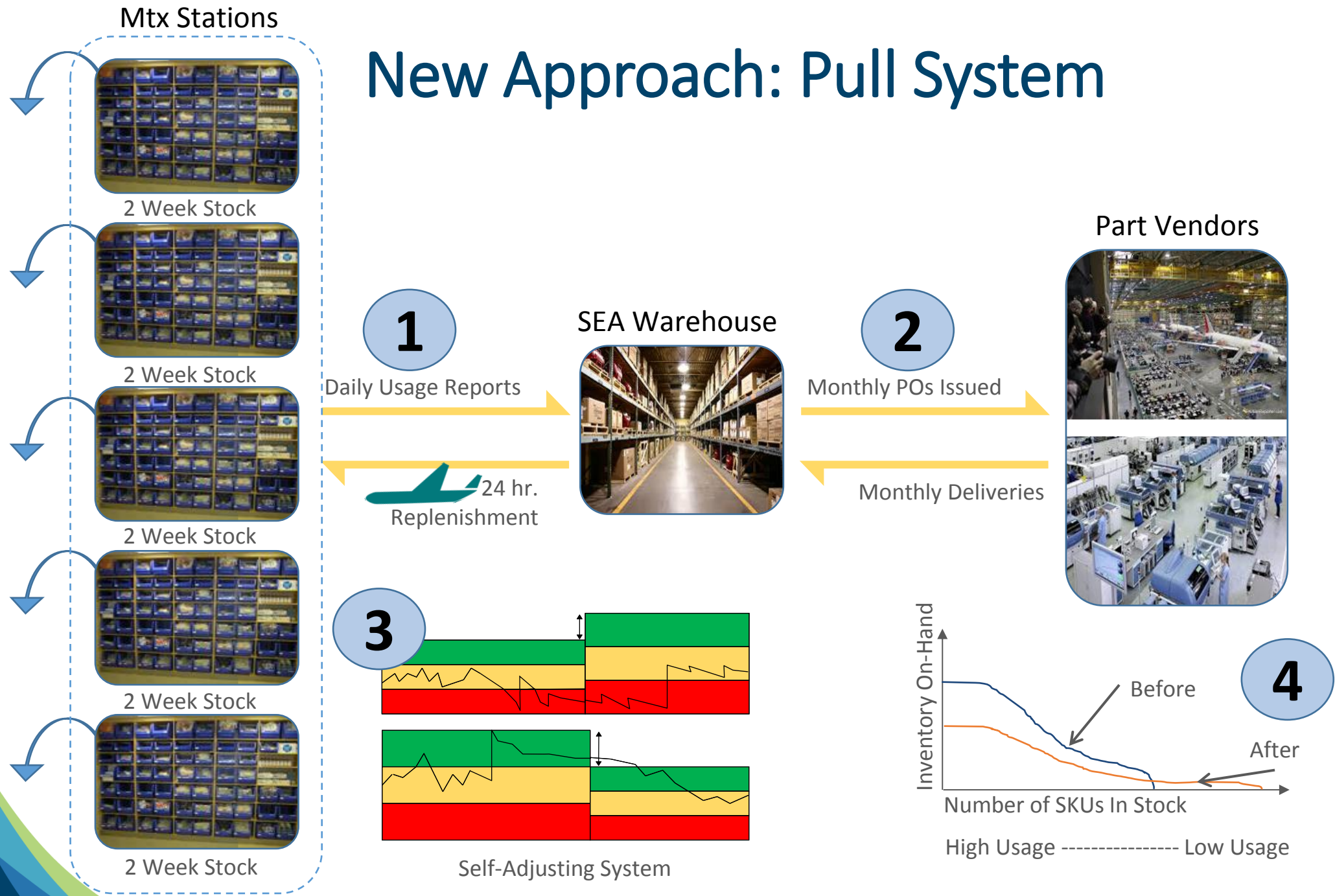
New Approach:

1. Improve FLOW (cut time between usage & restocking)

2. PULL based on consumption

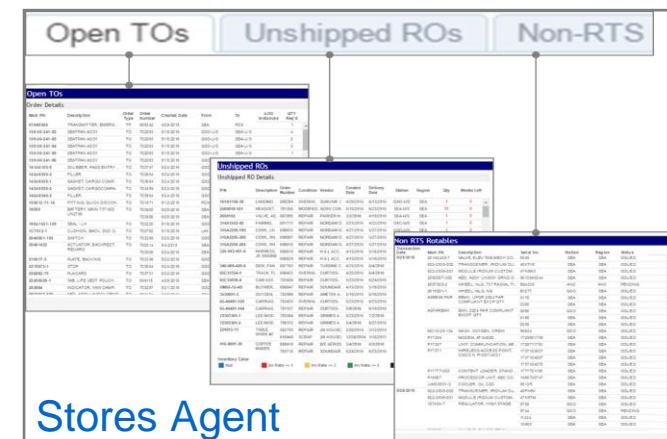
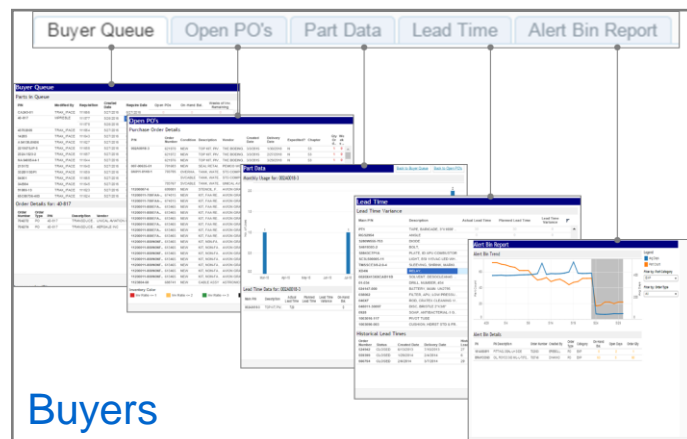
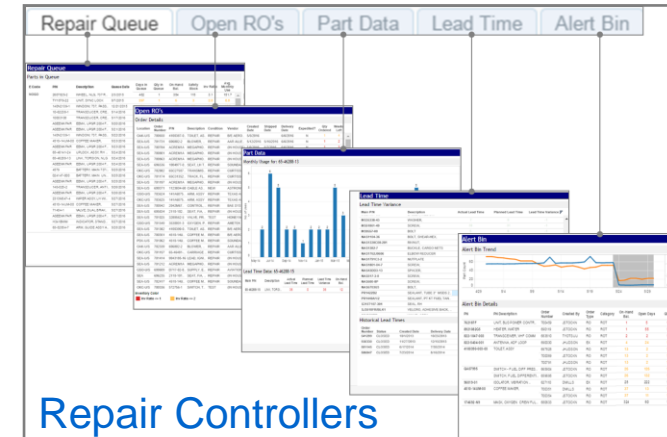
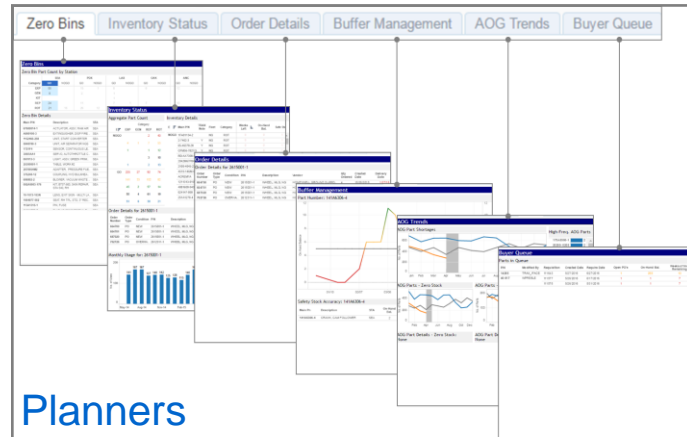


New Approach: Pull System



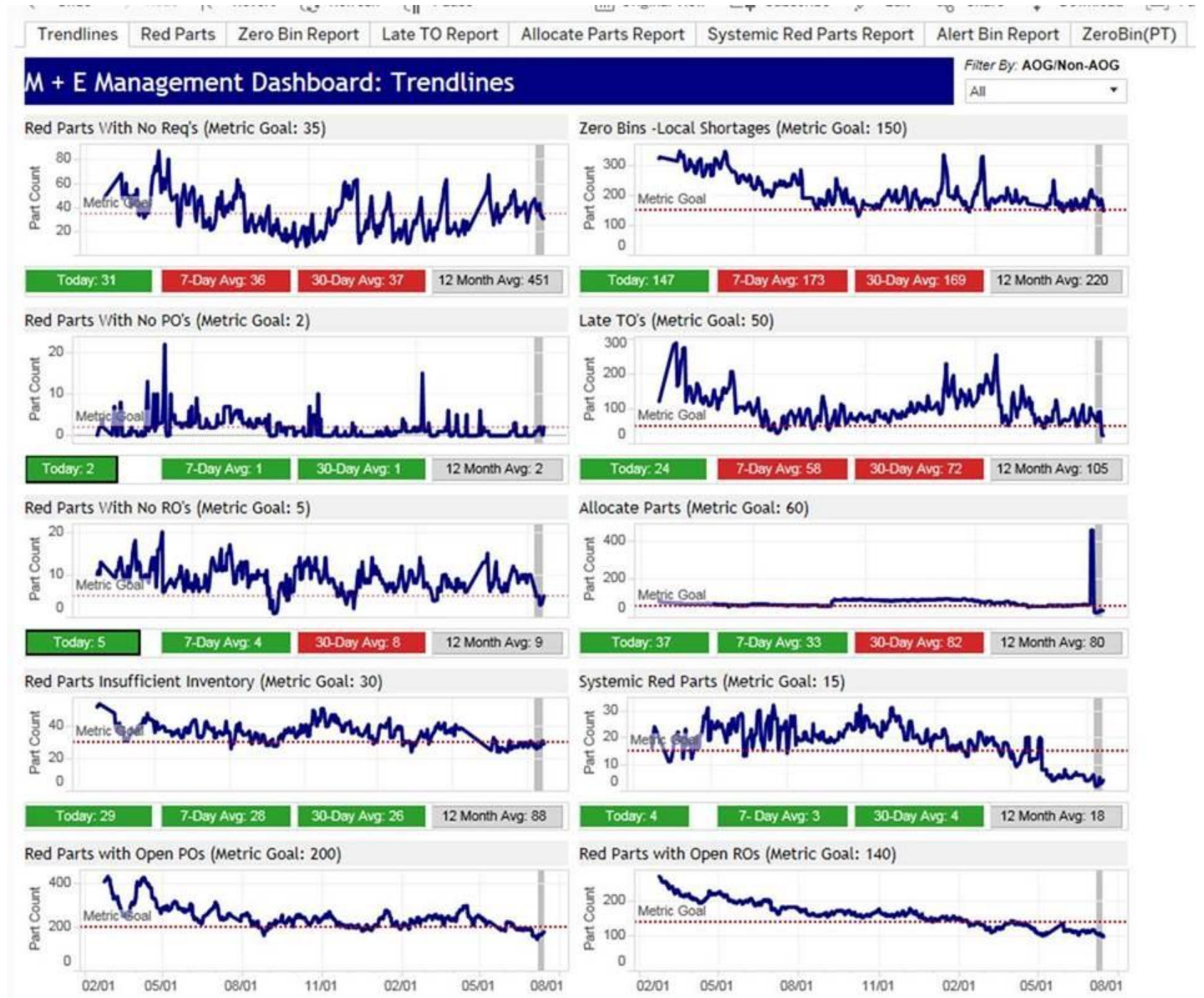
Role-Based Dashboards

(Synchronizing all roles to same priorities)




Management Dashboard

3 Years to Green



Learning to Use Data Visualization Every Day



AS Maintenance + Engineering

PROJECT • Project Leader: Bryan Crockett

Workbooks 73 Views 239 Data Sources 5 Details

▼ 0 selected

General Filters

Owner

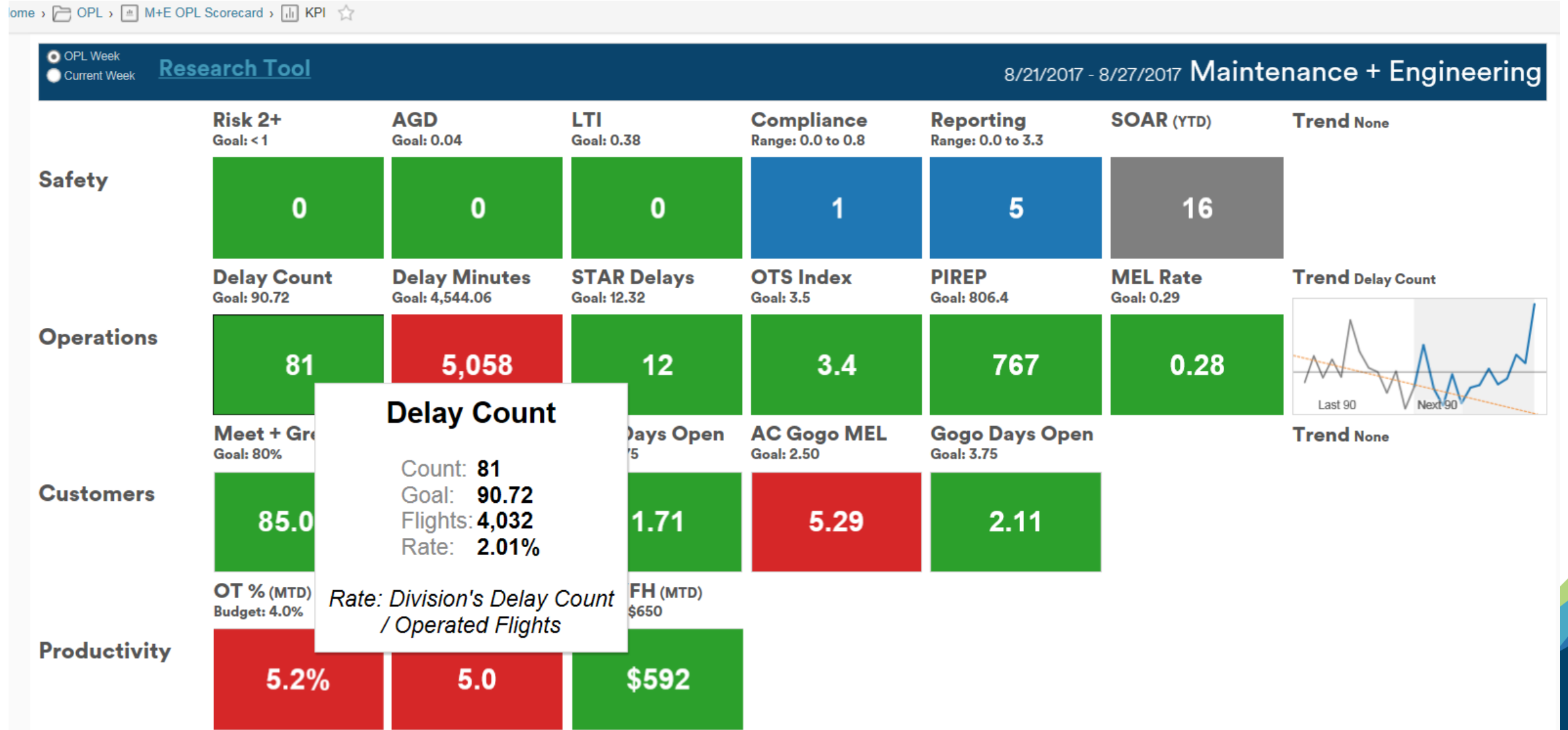
Tag

Modified on or after

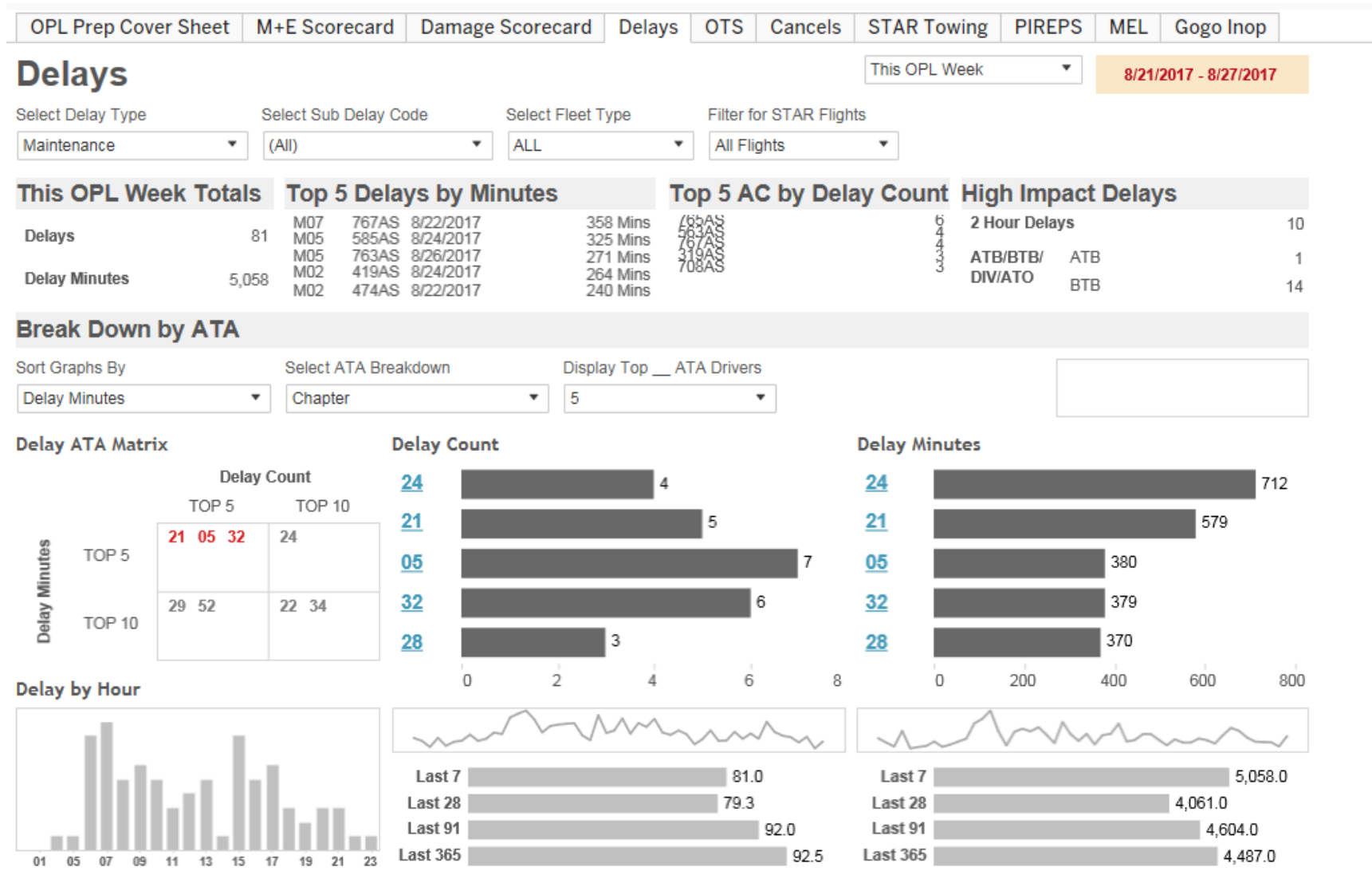
Modified on or before

| Name | | | | Views: All | Sheets | Size |
|--------------------------|--|---------------------------------|-----|------------|--------|----------|
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| <input type="checkbox"/> | | MEL Status | ... | 12,235 | 4 | 631.3 KB |
| <input type="checkbox"/> | | Delay Report | ... | 11,332 | 3 | 87.8 KB |
| <input type="checkbox"/> | | Planning - Business Review | ... | 9,703 | 11 | 896.1 KB |
| <input type="checkbox"/> | | M+E OPL Research Tool | ... | 8,951 | 10 | 69.8 MB |
| <input type="checkbox"/> | | Planning - Powerplant Dashboard | ... | 8,687 | 5 | 1.1 MB |
| <input type="checkbox"/> | | M+E Production Metrics - Daily | ... | 5,178 | 9 | 4.5 MB |

OPL Scorecard Research Tool



OPL Scorecard Research Tool – Delay Breakdown



The Data Will Set You Free

- Don't hide behind regulations
- Embrace the data...no matter how good or bad
- Every situation can be substantially improved

